

Oroville Facilities FERC Relicensing




SP –T7

Noxious/Invasive Plant
Species
June 2004



Objectives

This study provides information:

- ◆ on noxious weed occurrences and distributions within the study area
 - ◆ on the potential for Project operations to facilitate the spread of noxious plant species within the Project area and downstream waterways
 - ◆ that can help identify opportunities for enhancement of botanical and wildlife habitats
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- A stylized, dark teal silhouette of a mountain range is positioned in the bottom right corner of the slide, partially overlapping the text area.

Study Area


- ◆ FERC project boundary
- ◆ Lower Feather River to confluence with the Sacramento River

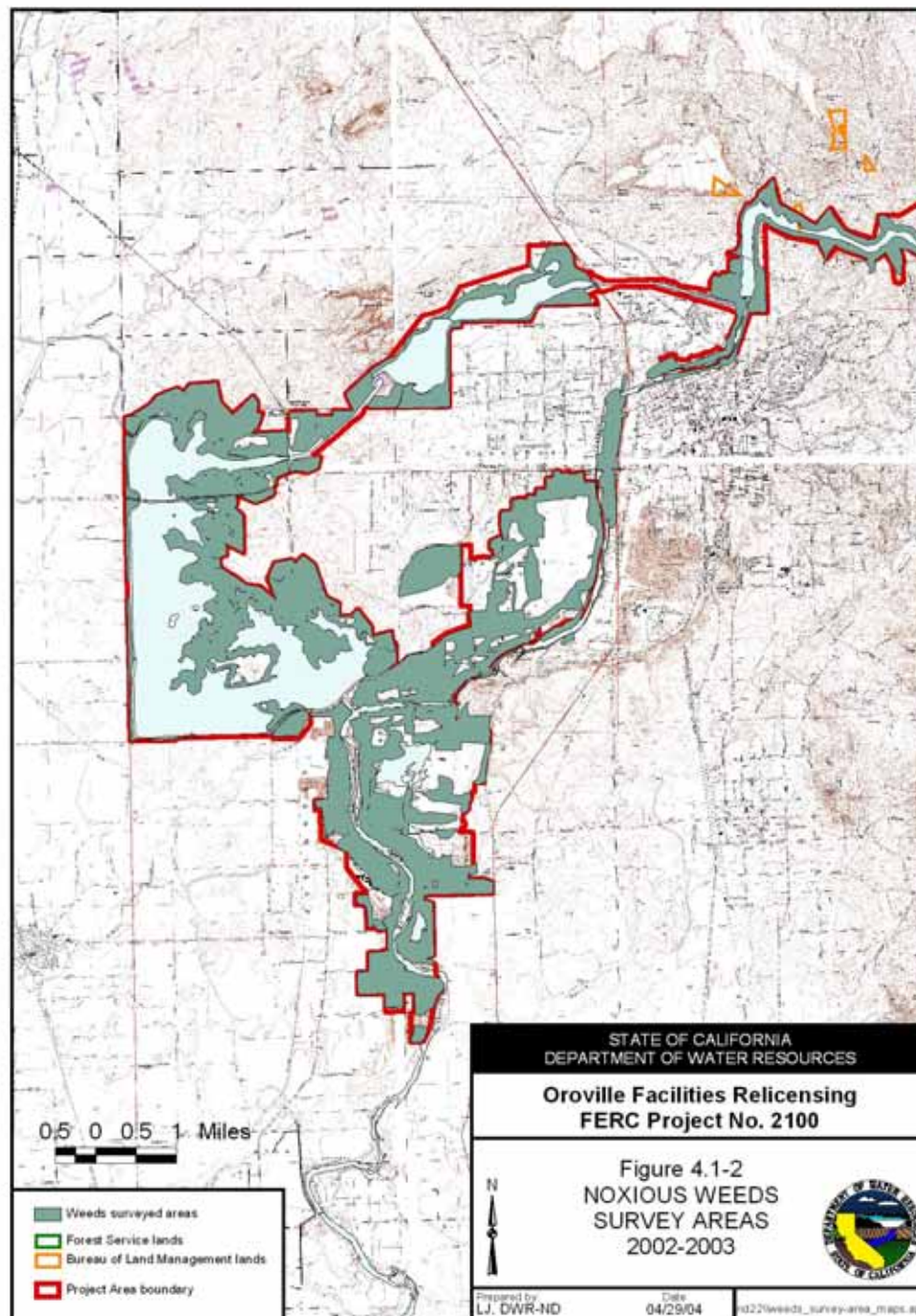
A list of noxious/invasive plant species with potential to occur in the study area was compiled from:

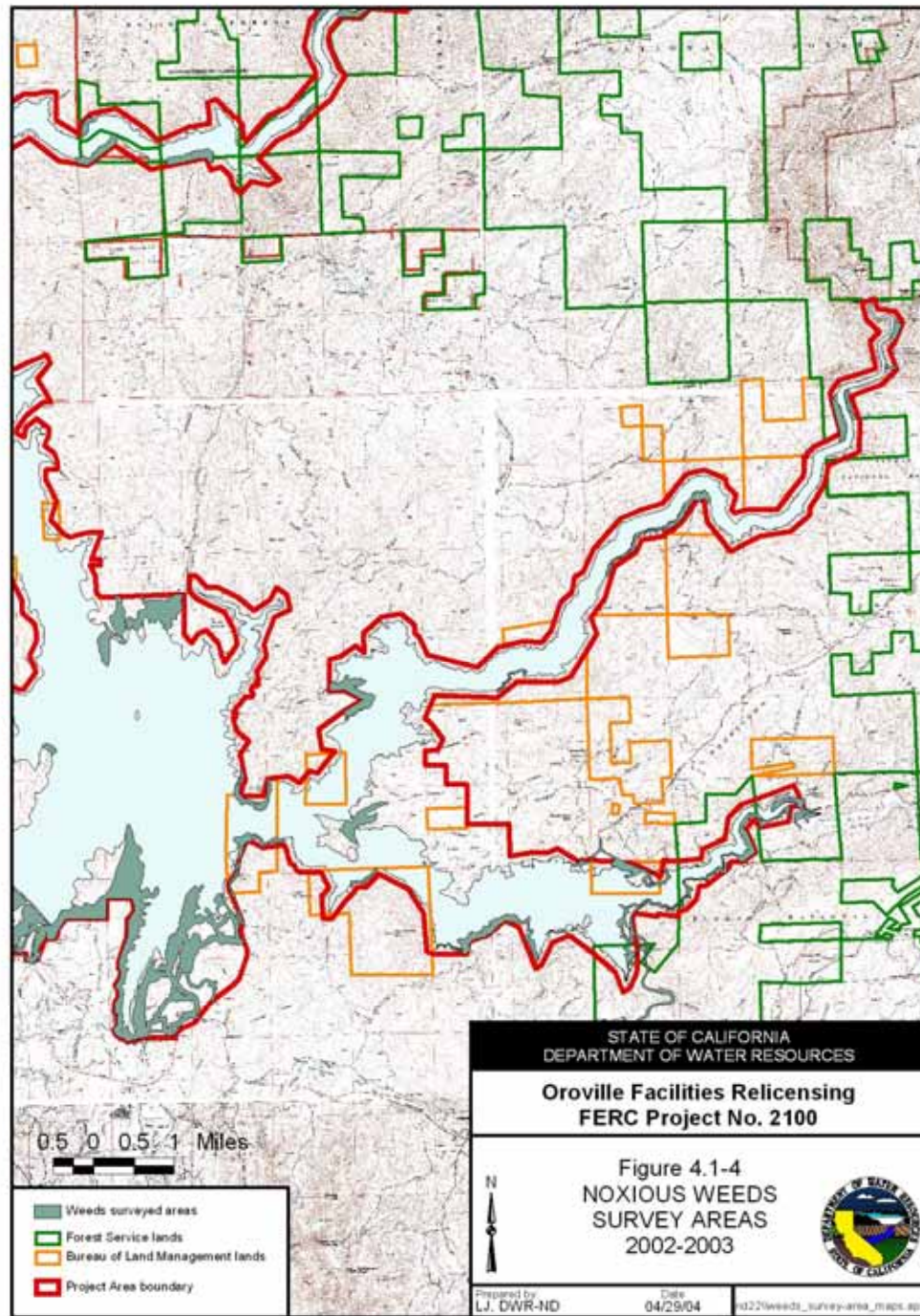
- ◆ California Invasive Plant Council (Cal-IPC)
 - ◆ California Department of Food and Agriculture (CDFA)
 - ◆ U.S. Department of Agriculture (USDA)
 - ◆ Plumas National Forest (USFS)
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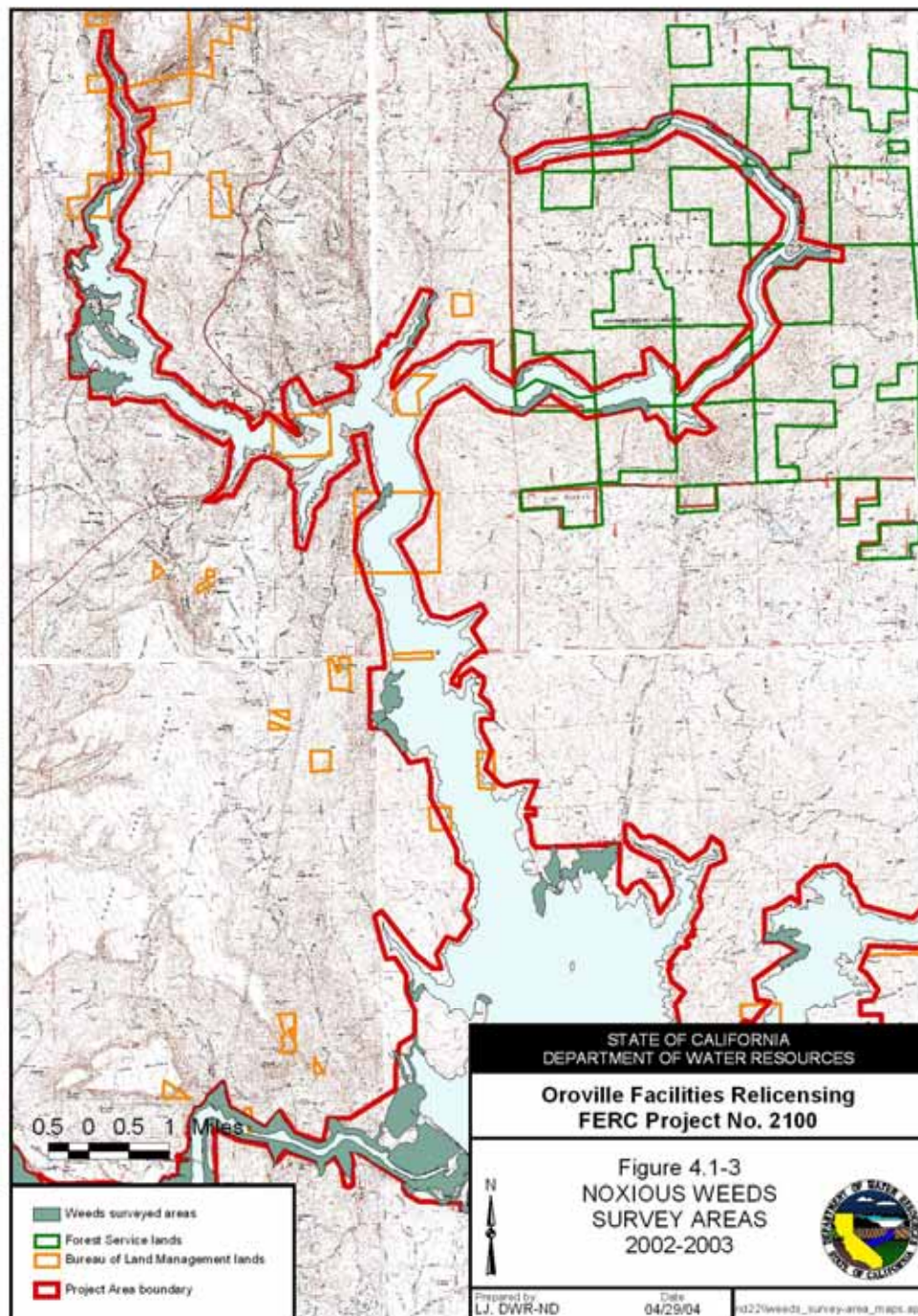
- ◆ A literature review was conducted on rated plant pests found within the study area
- ◆ Addressed the biology, ecology, dispersal mechanisms, control measures, and current management activities in PA and adjacent lands

Field studies


- ◆ Surveys conducted mostly in conjunction with other botanical studies in 2002/2003
 - ◆ 9900 acres surveyed
 - ◆ All non-native plant species noted
 - ◆ Some species completely surveyed i.e. purple loosestrife
 - ◆ Data collected with GPS or hand mapped and entered into GIS
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Results

- ◆ 39 of 64 target species identified in PA
 - ◆ 33 of these species found below Dam
 - ◆ 24 species found around Lake Oroville
 - ◆ Overall, 219 species of non-native plants identified in PA
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- ◆ Noxious/invasive plants found throughout the PA
- ◆ Riparian and wetland margins tend to be the most heavily infested areas
- ◆ Weed species most prolific in the OWA
- ◆ Water primrose (native and non-native subspecies mapped) - not on lists

Most Invasive Species below the Dam


- ◆ Purple loosestrife
 - ◆ Giant reed
 - ◆ Tree of heaven
 - ◆ Scarlet wisteria
 - ◆ Himalayan blackberry
 - ◆ Pampas Grass
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- ◆ Yellow starthistle
 - ◆ Medusahead


Most Invasive Species around Lake Oroville

- ◆ French, Spanish, and Scotch brooms
 - ◆ Rush skeleton weed
 - ◆ Tree of heaven
 - ◆ Himalayan blackberry

 - ◆ Edible fig
 - ◆ Yellow starthistle
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Purple loosestrife

- ◆ Herbaceous perennial that grows rapidly and produces numerous small seeds
 - ◆ Rapid growth and large reproductive capacity allows it to outcompete native plants
 - ◆ Forms dense stands that are unsuitable as cover, food, or nesting sites for native animal species
 - ◆ No natural predators for population control in this area
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- ◆ Control methods include mechanical (small populations), chemical, and biological control
 - ◆ Currently, DPR is in their fourth year of chemical treatment around the FB and Diversion Pool
 - ◆ DFG chemically treated TA and low flow channel (2002 only)
 - ◆ Biological control agents (beetles and root-boring weevils) have been released in the PA area by CDFA
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Purple loosestrife

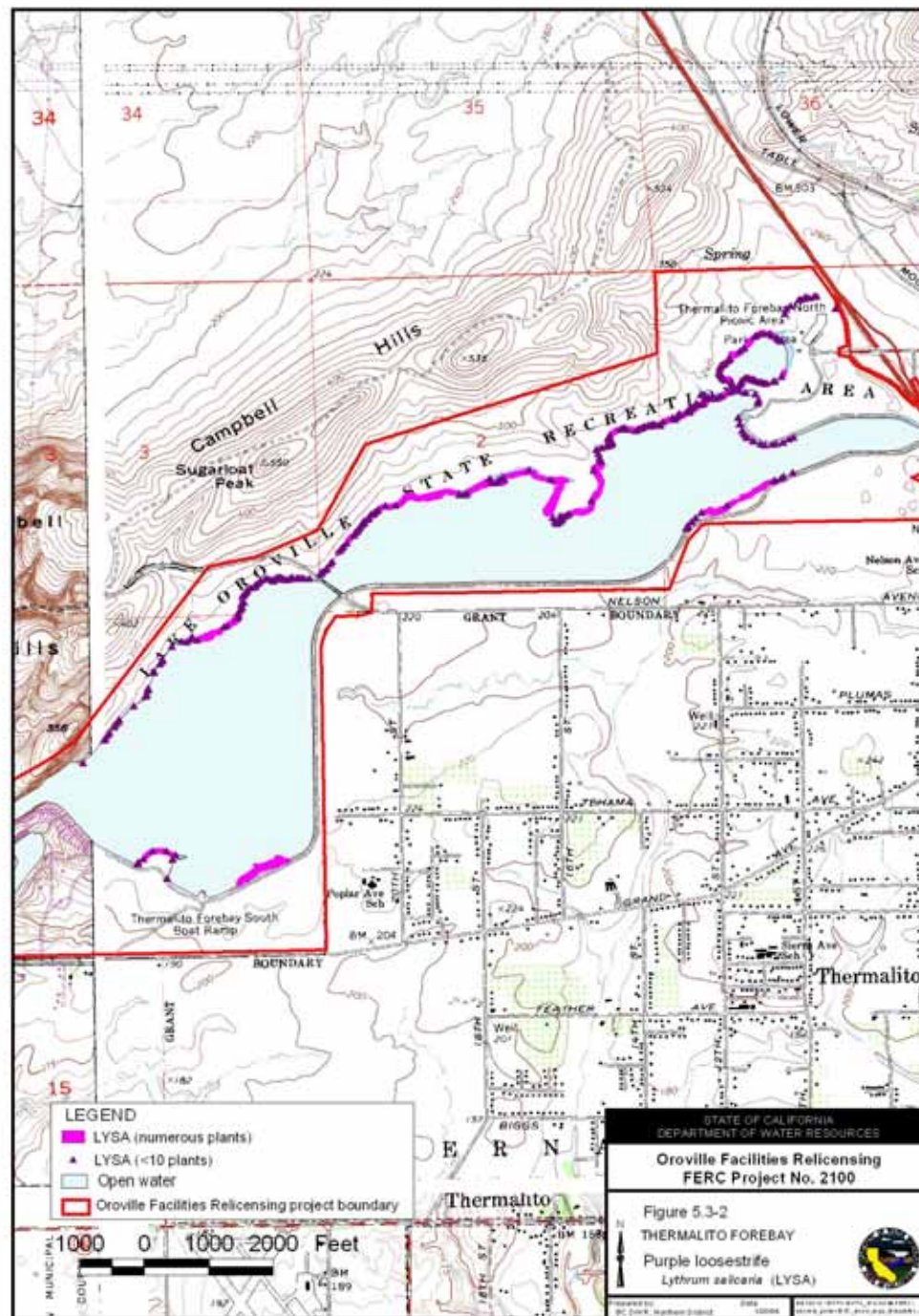
- ◆ Purple loosestrife found in 42 states and rated as serious pest in most
- ◆ Common invader of wetland habitats, including stream banks, edges of ponds, lakes, ditches, etc.
- ◆ Approximately 85 of the 900 acres of wetland/riparian margin around TA contain varying densities of loosestrife
- ◆ Also found around FB, along Diversion Pool and low flow channel, and scattered throughout the OWA (not found around LO)

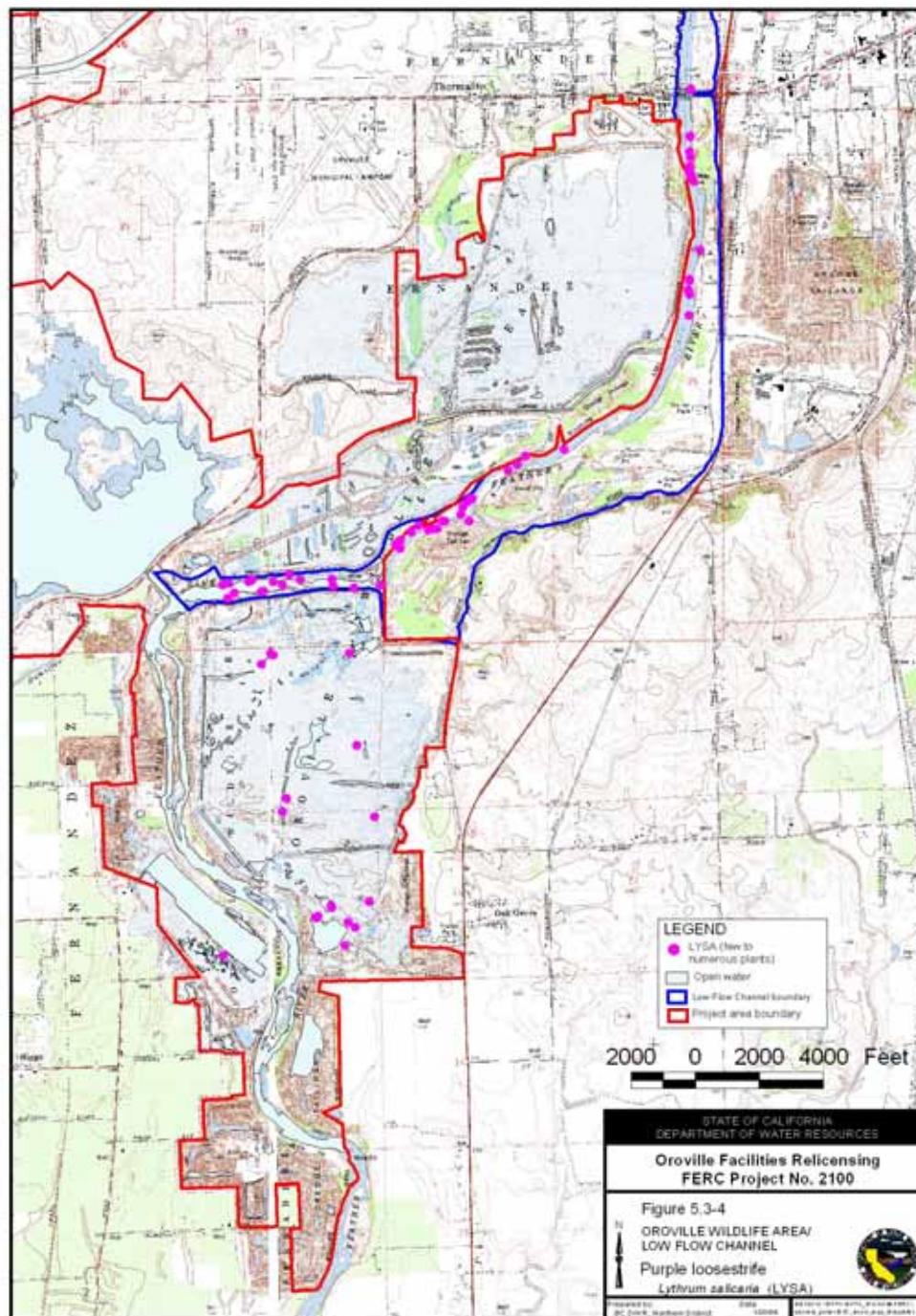















Tree of heaven

- ◆ Rapidly growing deciduous tree
 - ◆ Trees reproduce both sexually and asexually
 - ◆ Can produce numerous suckers from roots and resprout vigorously from cut stumps and root fragments
 - ◆ Can out-compete native vegetation, produces toxic chemicals that inhibit the establishment of other species
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- ◆ Widely naturalized in California below 6600 feet
 - ◆ Found in many wastelands and disturbed, semi-natural habitats as well as riparian and other naturally disturbed habitats
 - ◆ Control methods include mechanical and chemical methods requiring multiple year treatments
 - ◆ No biological control methods are known
 - ◆ No management activities for control of tree of heaven in PA
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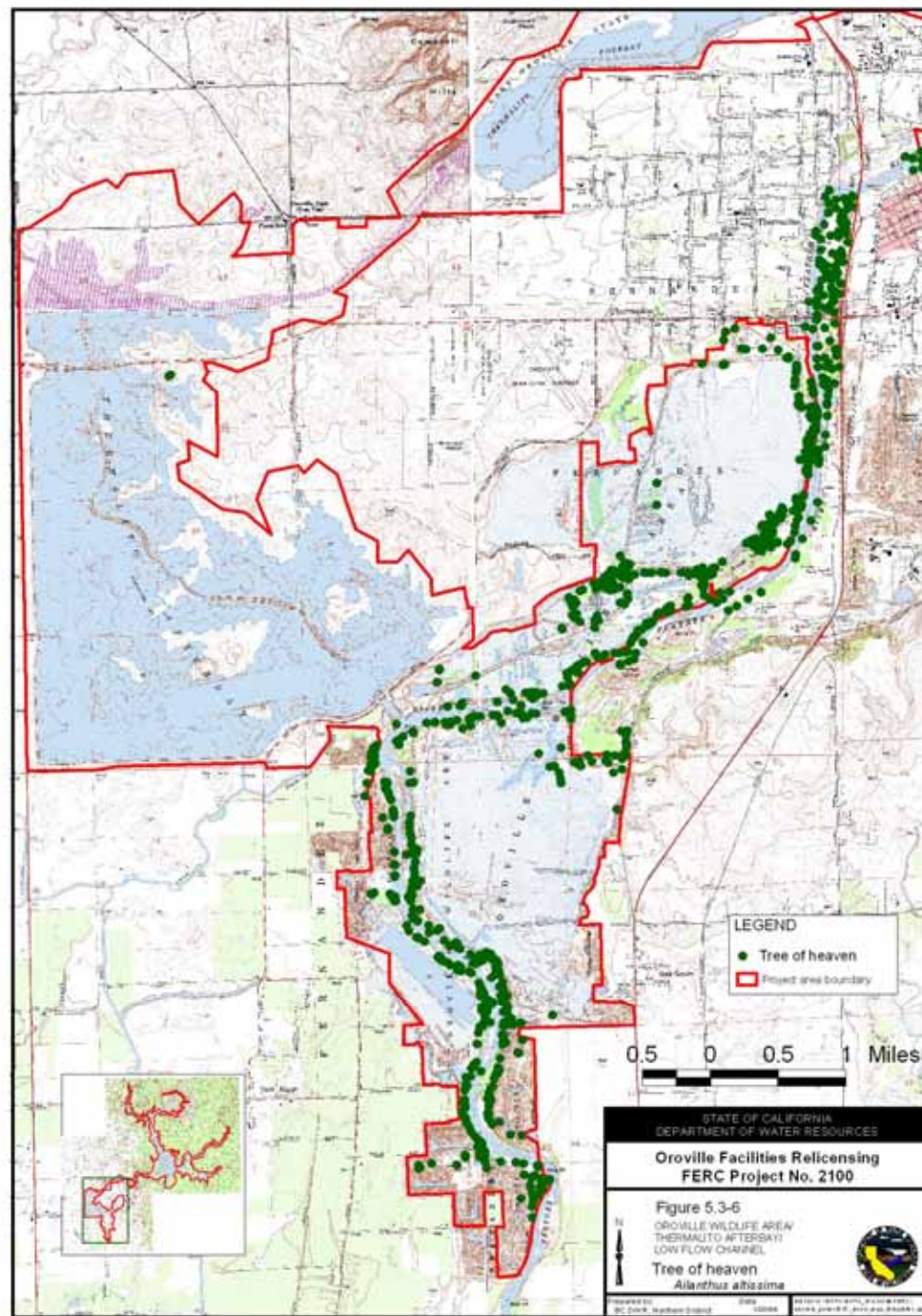
Tree of heaven

- ◆ Occurs in PA both above and below the Dam, but most prolific in the OWA
 - ◆ ~ 990 infestations, ranging from 1 to many dozens of trees
 - ◆ ~ 350 acres (in varying densities) occur below the Dam (OWA mainly)
 - ◆ None found around the FB
 - ◆ Intermingled with valley elderberry in ~250 of the 350 acres
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Giant reed

- ◆ Tall, perennial cane-like grass
 - ◆ Creeping rootstocks form compact masses of rhizomes which can spread and sprout rapidly
 - ◆ Does not produce viable seed in our area
 - ◆ Can quickly colonize and outcompete natives
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- ◆ One of the fastest growing land plants in the world and uses vast amount of water
 - ◆ Invasive pest throughout the warmer coastal freshwater areas from Maryland to California
 - ◆ Increases flammability of riparian areas
 - ◆ Invasion less severe in No. Calif. than So. Calif. But is rapidly spreading
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- ◆ Control methods include mechanical and chemical methods requiring multiple year treatments
 - ◆ Usually involve chemical treatments alternating with manual removal and yearly follow-up treatments until control is achieved
 - ◆ No biological pests approved in Calif.
 - ◆ No local management activities known in PA
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- ◆ Occurs in PA above and below the Dam
 - ◆ Only one plant above the Dam outside the PA near Ponderosa Dam on South Fork
 - ◆ 163 separate infestations mapped below Dam, mainly in the OWA
 - ◆ 45 sites around TA
 - ◆ No plants found around FB or Diversion Pool
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Scarlet wisteria

- ◆ Deciduous riparian shrub or small tree
 - ◆ Bright showy red flowers that produce hundreds of seedpods that are dispersed by water
 - ◆ Forms solid stands along riverbanks, displacing native vegetation and wildlife habitat
 - ◆ All parts of the plant are poisonous to mammals, birds, and reptiles
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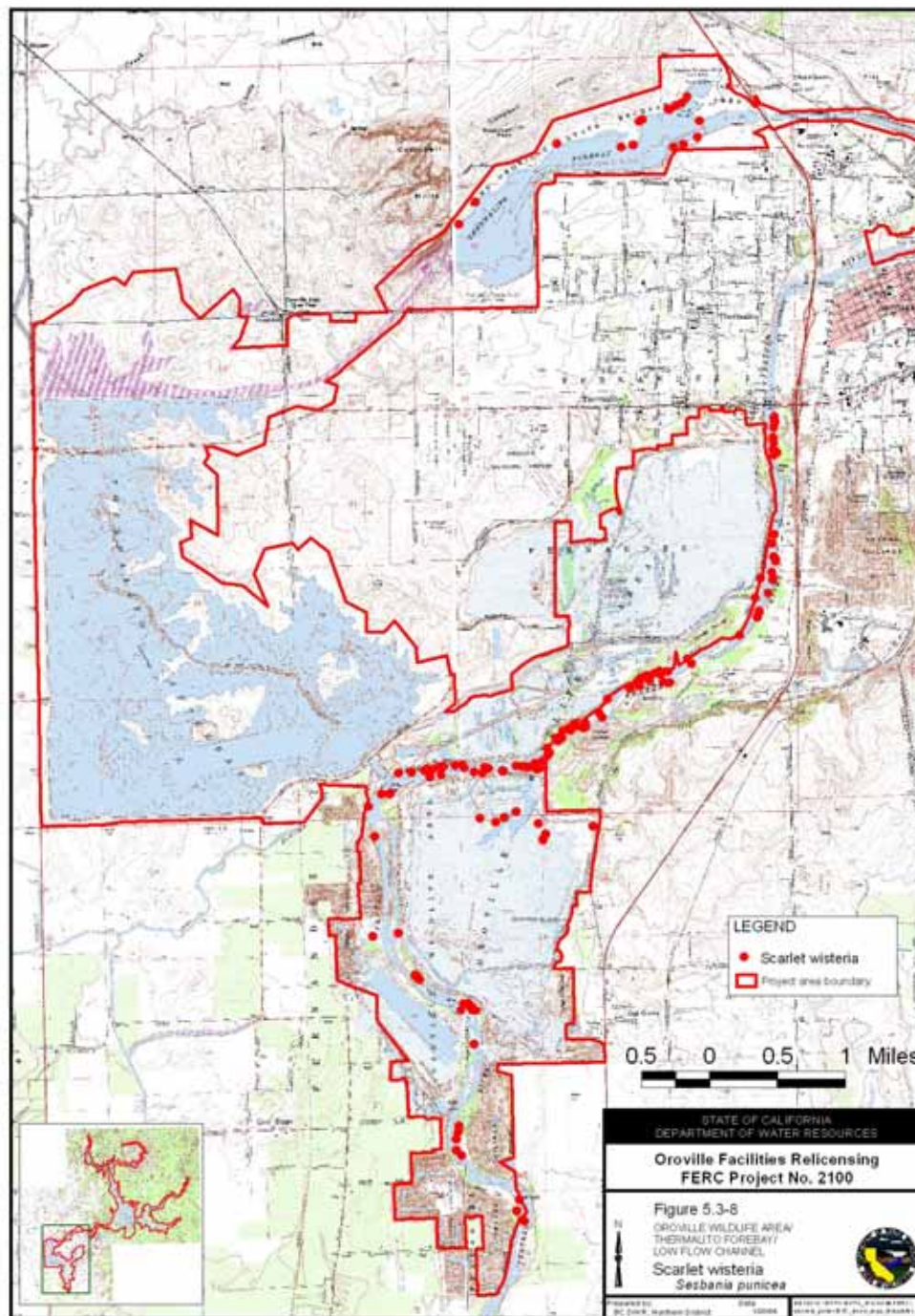
- ◆ Considered serious pest in So. Africa
 - ◆ In the U.S., has invaded Florida and Georgia to Texas
 - ◆ Only recently in the Central Valley
 - ◆ Rapidly expanding its range along rivers in the San Joaquin and Sacramento valleys and in the Delta
 - ◆ Control methods include mechanical and chemical treatments
 - ◆ DPR currently treating plants around FB
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- ◆ Occurs in PA below the Dam
- ◆ ~4.5 acres mapped within OWA, FB, and along low flow channel
- ◆ No plants seen around the TA or LO
- ◆ 134 small occurrences in OWA
- ◆ 18 occurrences around the FB
- ◆ More than 3 acres along low flow channel
 - forms continuous bands along water's edge in some areas













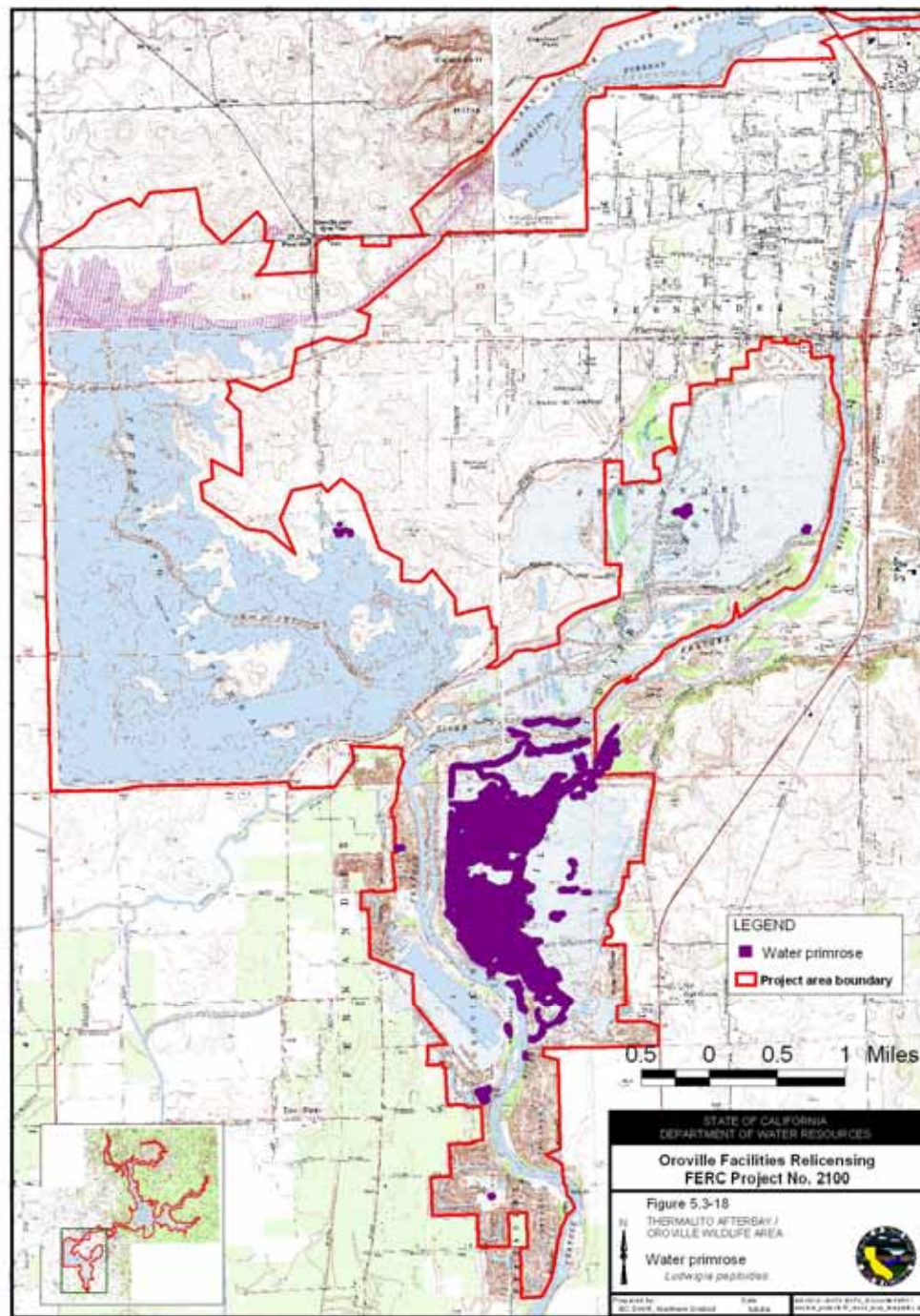
















- ◆ Species are on the lists for different reasons – some are agricultural pests; others impact native plant community structure and wildlife habitat
 - ◆ Most of the weed species occur throughout California
 - ◆ Most have been in the PA for many years and occur both within and on adjacent lands outside the PA
 - ◆ Historical and present-day land-use within PA and adjacent lands have contributed to the spread of invasive species
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- ◆ Fluctuating water levels in the TC and in LO and managed flows in the low flow channel may spread and encourage the proliferation of non-native species
 - ◆ Maintenance and other land disturbing activities promote the proliferation of invasive species into upland and riparian/wetland areas
 - ◆ Weed populations within the PA can be spread by vehicular traffic, water movement, recreational use, and any ground-disturbing activity
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- ◆ Removal of weed species within the PA would enhance native plant communities and wildlife habitat
 - ◆ Management of important species will help to reduce the number of seeds and/or plant parts that are flushed downstream
 - ◆ Many of the species within the PA are so widespread that management and/or control is probably not feasible
 - ◆ Some widespread species, such as tree of heaven, impact "listed" species habitats, so management should be considered
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- ◆ Although DWR may manage the invasion and distribution of invasive species within the PA, adjacent land use activities will continue to influence the degree of success and/or failure of weed management
 - ◆ A weed management plan could be developed to address those species considered highest priority
 - ◆ Widespread species may not be addressed in project-wide management plan, but can be addressed on individual project-by-project basis
 - ◆ Restoration/planting with native species may be a part of any weed control program
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